



EXPLORING EXPORT POTENTIAL AND GREEN ECONOMIC PRACTICES IN ARCHIPELAGIC REGIONS

Syarifatus Salafin¹
Uswatun Nurul Afifah²
Royhan Faradis^{3*}

¹ Kediri Regional Indonesian Financial Services Authority, Kediri, Indonesia

² Statistics Indonesia East Java Province, Surabaya, Indonesia

³ Statistics Indonesia Sidoarjo Regency, Sidoarjo, Indonesia

ABSTRACT

The leading exports of the island provinces still rely on primary goods rather than derivative goods. The exploitation of nature continues to be a strategy for island regions to enhance economic growth, but this approach does not promote a sustainable economy. This research aims to further describe the export commodities that remain dominant in provinces with archipelagic topography and to examine in greater detail the impact of these export activities on environmental resilience. The research methodology employs panel data regression with the Environmental Quality Index (EQI) serving as the dependent variable. The analysis reveals that economic activities, particularly exports, collectively influence the EQI. Furthermore, the research findings indicate a tendency for a weak relationship between superior commodity export activities and labor absorption.

Keywords: Environmental Quality, Leading Exports, Unemployment

ARTICLE INFO

Received: August 22nd, 2024
Revised: November 15th, 2024
Accepted: November 26th, 2024
Online: December 5th, 2024

*Correspondence:
Royhan Faradis

E-mail:
royhan.faradis@bps.go.id

ABSTRAK

Ekspor unggulan provinsi-provinsi kepulauan masih bergantung pada barang primer bukan barang derivatif. Eksploitasi terhadap alam masih menjadi strategi daerah kepulauan dalam meningkatkan pertumbuhan ekonomi. Hal tersebut tidak mendukung perekonomian yang berkelanjutan. Penelitian ini bertujuan untuk menggambarkan lebih jauh terkait komoditas ekspor yang masih menjadi unggulan provinsi-provinsi dengan topografi kepulauan serta melihat lebih detail bagaimana aktivitas ekspor tersebut berdampak pada ketahanan lingkungan. Metode penelitian ini menggunakan regresi data panel dengan variabel dependen Indeks Kualitas Lingkungan Hidup (IKLH). Hasil analisis menunjukkan bahwa aktivitas perekonomian terutama ekspor secara bersama-sama memengaruhi IKLH. Hasil penelitian juga menunjukkan bahwa hubungan aktivitas ekspor komoditas unggulan dan penyerapan tenaga kerja cenderung lemah.

Kata Kunci: Kualitas Lingkungan, Ekspor Unggulan, Pengangguran

JEL: E24; F18

To cite this document: Salafin, S., Afifah, U. N., & Faradis, R. (2024). Exploring Export Potential and Green Economic Practices in Archipelagic Regions. *Jurnal Ilmu Ekonomi Terapan*, 9(2), 270-280. <https://doi.org/10.20473/jiet.v9i2.62155>

Jurnal Ilmu Ekonomi Terapan; p-ISSN: 2541-1470; e-ISSN: 2528-1879

DOI: 10.20473/jiet.v9i2.62155



Introduction

Over the past two decades, the effects of environmental damage, global warming, and climate change have become increasingly alarming. We cannot ignore these issues, as human activities continue to exploit resources, making things worse. The consequences, like floods, coastal erosion, and pollution are seriously affecting people's lives all over the world. [Malihah \(2022\)](#) stated that the World Meteorological Organization (WMO) noted 2020 as one of the hottest years ever. Since the early 1900s, the global temperature has risen by about 1.2 degrees Celsius (2.2 degrees Fahrenheit). This change is particularly dangerous for Indonesia's islands, which face severe threats from rising sea levels.

Indonesia is especially vulnerable to these rising sea levels. The consequences are not just economic losses but also challenges like migration and loss of habitats for various species. These environmental issues are a significant threat to Indonesia's economy, which heavily relies on natural resources like oil, gas, coal, and minerals. Unfortunately, the importance of protecting the environment is often overlooked. This neglect has led to problems like air and water pollution, soil degradation, and deforestation, which, in turn, decrease natural resource productivity and deepen poverty among communities dependent on these resources.

The main cause of environmental damage is development strategies and policies that are not environmentally friendly. According to [Ramadhani et al. \(2022\)](#), national policies often focus more on economic gains than environmental sustainability or community well-being. The state and businesses often exploit the environment and natural resources to achieve economic growth without considering the long-term consequences.

This approach contradicts the idea of a sustainable economy. As [Pramesti et al. \(2021\)](#) described, environmentally friendly economic growth benefits society strongly. As defined by the World Commission on Environment and Development (WCED) in 1987, sustainable development emphasizes that economic growth should improve people's well-being while protecting the environment. [Kasztelan \(2017\)](#) added that green growth and the green economy concepts integrate social and environmental factors into economic processes to achieve sustainable development. Green growth, therefore, involves responsible use of natural resources, reducing pollution, and creating social benefits through environmentally friendly economic development. These three concepts—green growth, green economy, and sustainable development—are closely linked and inseparable.

Unlike traditional development models that rely on unsustainable practices like resource over-exploitation, green economic growth is a more balanced approach. It combines economic growth with environmental sustainability, poverty reduction, and social inclusion. The Indonesian government has adopted a green economy strategy to transform the economy in the medium to long term. This strategy aims to speed up economic recovery after the COVID-19 pandemic and promote inclusive, sustainable economic growth by exporting value-added products instead of raw materials, which carries lower environmental risks.

[Sandi \(2023\)](#) highlighted that a sustainable economy depends on the leading sectors in each region. In his research on economic shifts, he found that Makassar's economy has gradually shifted from the primary sector to more productive sectors (secondary and tertiary) over the decades. This shift also affects the types of goods the region exports. The same trend is seen in other provinces in Indonesia. Based on past experiences, Indonesia needs to continue exporting processed primary commodities and non-mining products. Now is the time for the country to realign its industrial and trade strategies.

Table 1: List of Leading Exports from Archipelagic Provinces in Indonesia, 2023

No	Province	Leading Export (HS Code)	Classification
1	Southeast Sulawesi	Iron and Steel (72)	Basic Goods
2	North Sulawesi	Animal/Vegetable Fats and Oils (15)	Basic Goods
3	Riau Archipelago	Electrical Machinery/Equipment (85)	Derivative Goods
4	Bangka Belitung	Tin (80)	Basic Goods
5	Maluku	Fish and Shrimp (03)	Basic Goods
6	North Maluku	Iron and Steel (72)	Basic Goods
7	West Nusa Tenggara	Machinery/Mechanical Appliances (84)	Derivative Goods
8	East Nusa Tenggara	Electrical Machinery/Equipment (85)	Derivative Goods

Source: [Statistics Indonesia \(2023\)](#)

Based on the main goods exported by Indonesia’s island provinces, many are focused on primary sector products. The leading industries in these regions depend heavily on basic goods rather than more advanced, value-added products that are better for the environment. According to Table 1, 5 out of 8, or about 62.5% of Indonesia’s island provinces, are still exporting raw materials or basic goods to other countries. This means that natural resource exploitation is still a key strategy for these provinces to drive economic growth and create jobs. However, this approach is unsustainable and does not align with the principles of a sustainable economy. For instance, the Bangka Belitung Islands continue to rely on tin as a top export year after year. Tin mining has been ongoing in this region since the 17th century, during the Dutch colonial period. Over the centuries, the industry has grown, but this growth has also led to various conflicts, including social and economic issues for local communities. Environmental problems, such as deforestation and groundwater contamination, have also arisen. Deforestation, often a result of clearing land for mining, reduces forest areas, while using chemicals in mining can pollute water and soil.

This research will explore which export commodities continue to be the mainstay of provinces with island geographies. It will delve into how these export activities impact environmental sustainability and whether they help address social issues like unemployment. Additionally, the study will analyze the economic dependencies these regions have on particular resources and how fluctuations in global markets affect local livelihoods. By examining both environmental and social dimensions, the research aims to provide comprehensive insights into the long-term viability of these export practices for island-based economies.

Literature Review

[Wahyuni & Hilal \(2022\)](#) highlighted from previous research that natural resource exploitation damages ecosystems, which undermines green economic development. At least five principles must be followed to build a green economy. First, the well-being of all people must be ensured. Second, equity across generations must be achieved. Third, natural resource-based activities must be sustained, restored, and invested in. Fourth, sustainable levels of consumption and production must be promoted. Fifth, strong, integrated, and accountable systems must support these efforts. [Maidasari & Murtiana \(2023\)](#) stated before that exploring the potential of renewable energy as a green economic stimulus in Indonesia. The research results show that the potential for utilizing renewable energy in Indonesia is still very low, only 0.3% of the total existing potential.

The lack of research on the relationship between the green economy and island regions has piqued the author's interest. However, [Telesford \(2014\)](#) examined the effectiveness of the green economy in promoting sustainability within the context of island environments. Every business that wishes to sustain itself indefinitely is challenged by the socio-ecological system that constitutes sustainability. Every region tends to export their goods to increase their GDP but all export activities have materials, energy and waste flows (MEWFs) and a more strategic approach to managing these flows can assist businesses with the sustainability challenge especially in unique geography.

This study looks at how exports from provinces with island geographies affect the environment. The focus on island regions is due to their unique characteristics, such as long coastlines, which allow them to establish their own ports and directly export their key commodities to other countries. The study is limited to island provinces that are part of the Association of Indonesian Archipelago and Coastal Local Governments (ASPEKSINDO). These island and coastal areas are crucial for Indonesia's future, as there are at least 11 marine economic sectors with growth potential. These sectors include capture fisheries, aquaculture, fish processing, marine biotechnology, mining and energy, marine tourism, forestry, maritime transportation, small island resources, maritime services, and non-conventional natural resources.

Data and Research Methods

The Environmental Quality Index (IKLH) serves as a crucial tool for evaluating environmental management performance. [Statistics Indonesia \(2023\)](#) has compiled the Environmental Quality Index (IKLH) statistics. This index provides a multidimensional dimension used as a source of information to support decision-making processes related to planning, development, and environmental management. By integrating indicators for water, air, land, and sea, the IKLH offers insights into environmental conditions at both national and regional levels, down to districts and cities. IKLH is more than just a measurement tool; it represents a deep dive into understanding environmental dynamics. Calculating the IKLH at the district/city level shows a commitment to tracking environmental changes and challenges in detail. Combining concepts from the Environmental Quality Index (EQI) and the Environmental Performance Index (EPI), the IKLH reflects the effectiveness of environmental improvement programs. As a policy-support tool, IKLH provides essential data that helps guide sustainable decisions in environmental protection and management.

According to [Statistics Indonesia \(2022\)](#) in their publication "Environmental Statistics," the environmental quality indicators used to calculate the IKLH include three main indexes: the Water Quality Index (IKA), measured by parameters like pH, TSS, DO, BOD, COD, Total Phosphate, Fecal Coli, and $\text{NO}_3\text{-N}$; the Air Quality Index (IKU), based on SO_2 and NO_2 levels; and the land cover index, which is measured by the extent of forest cover. These multidimensional factors come together to form the IKLH, which serves as the independent variable in studies. Meanwhile, the economic variables in this study, such as economic growth rate (x1), total exports (x2), and the value of key export commodities (x3), are the independent variables.

The discussion will produce statistics that describe the relationship between two variables, whether the IKLH and economic variables or economic and social variables. This research also uses Pearson correlation analysis. [Yanti & Akhri \(2021\)](#) explained that Pearson correlation is a simple type of correlation involving one dependent and one independent variable. It produces a correlation coefficient that measures the strength of the linear relationship between two variables. If the relationship is not linear, the Pearson correlation

coefficient may not accurately reflect the strength of the relationship, even if the variables are strongly related. Siregar (2017) added that the correlation coefficient is a measure used to evaluate the degree of relationship between variables. The value ranges from -1 to 1, with -1 indicating a perfect negative correlation, meaning the influence of variable X on variable Y is very weak, while 1 indicates a perfect positive correlation, meaning a very strong influence of variable X on variable Y. A coefficient of 0 indicates no relationship between the variables. If the relationship between two variables is linear, the data will form a straight line, although a perfect straight line is rare in practice.

Siregar (2017) provided guidelines for interpreting correlation coefficient values: 0.00 to 0.199 indicates a very low or weak relationship, 0.20 to 0.399 indicates a low or weak relationship, 0.40 to 0.599 indicates a moderate relationship, 0.60 to 0.799 indicates a strong relationship and 0.80 to 1.000 indicates a very strong relationship. In addition to correlation statistics, this study uses panel regression analysis. Madany & Rais (2022) stated that panel regression can be used to examine interactions and effects between subjects over a specific period. Panel regression allows for the control of individual and time effects in the analysis. Faradis & Afifah (2023) also suggested that panel analysis of island provinces is the best approach for examining policy developments across regions over the same period. This is because the increasing decentralization of government programs has made the conditions between provinces more unique, which is useful for measuring the impact of policies on economic and environmental changes.

Woolridge (2010) described panel regression as a statistical analysis method that combines data from two dimensions: time (time series) and individuals (cross-sectional). Key elements of panel regression include:

1. Fixed Effects: Represents differences between individuals that remain constant over time and cannot be estimated by variables that don't change over time.
2. Time Effects: Captures changes in the dependent variable over time that are common to all individuals.
3. Pooled Effects: Treats panel data as a single cross-sectional data set, ignoring differences between individuals and time.
4. Random Effects: Assumes that individual effects are not fixed and can be statistically estimated.

The general form of panel data regression is as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{1,it} + \beta_2 X_{2,it} + \beta_{it} \quad (1)$$

$Y_{it} = \beta_0$ with,

- Y_{it} : The value of the dependent variable for individual-i at time-t,
- i : 1,2,3, . . . N
- t : 1,2,3, . . . T
- X_{kit} : The value of independent variable k for individual i in year t
- β : Estimated parameter
- ε_{it} : Error term for individual i in period t

Finding and Discussion

In the first discussion, we will begin with an overview of the export performance of key commodities from the island provinces in Indonesia for the year 2023. This detailed depiction is presented in Figure 1

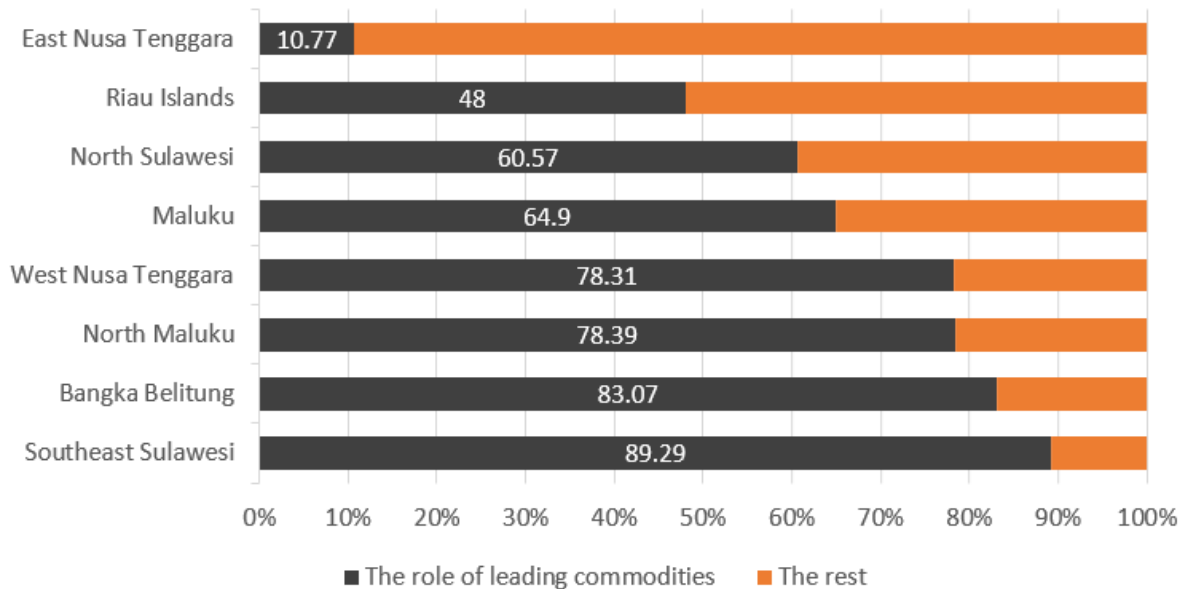


Figure 1: The Role of Key Commodity Exports Among Indonesia’s Island Provinces (Percents)

Source: [Statistics Indonesia \(2024\)](#)

In Figure 1, it is evident that key commodities in almost all island provinces in Indonesia played a significant role in 2023. The Bangka Belitung Islands Province, with its tin commodity, and Southeast Sulawesi Province, with iron and steel, accounted for over 83 percent of their export share. The third largest share belongs to North Maluku Province, with iron and steel commodities making up 78.39 percent of its exports. Indonesia is indeed renowned as one of the largest global exporters of iron and steel. According to [Aisyah & Hardiyati \(2019\)](#), the manufacturing and domestic transportation sectors were projected to remain the largest energy consumers at least until 2025. [Mahardika & Aisyah \(2023\)](#) further stated that the iron and steel industry is expected to experience significant economic growth in the coming years due to massive domestic infrastructure development and increasing global demand.

Given the substantial role of these key commodities, it is important to assess the environmental impact of these export activities. [Mania & Rieber \(2019\)](#) recommended using scatterplots to analyze the impact of one variable on another, especially in evaluating sustainable economic development and export diversification. The calculation of the Environmental Quality Index (IKLH) is chosen as it serves as the best multidimensional indicator to describe the environmental conditions in various regions across Indonesia. This is a positive sign for Indonesia’s green trade and transition policies. The private sector, particularly companies involved in global value chains, will be crucial in realizing Indonesia’s potential in green trade by creating exports of environmentally friendly products. The Environmental Quality Index (IKLH) of Indonesia in 2023 increased by 0.12 points compared to 2022, reaching 72.54 points. This number has surpassed the target of 69.48 points for 2023. After all, this achievement is considered positive. However, nationally, water pollution remains a key issue that negatively impacts the country’s IKLH score.

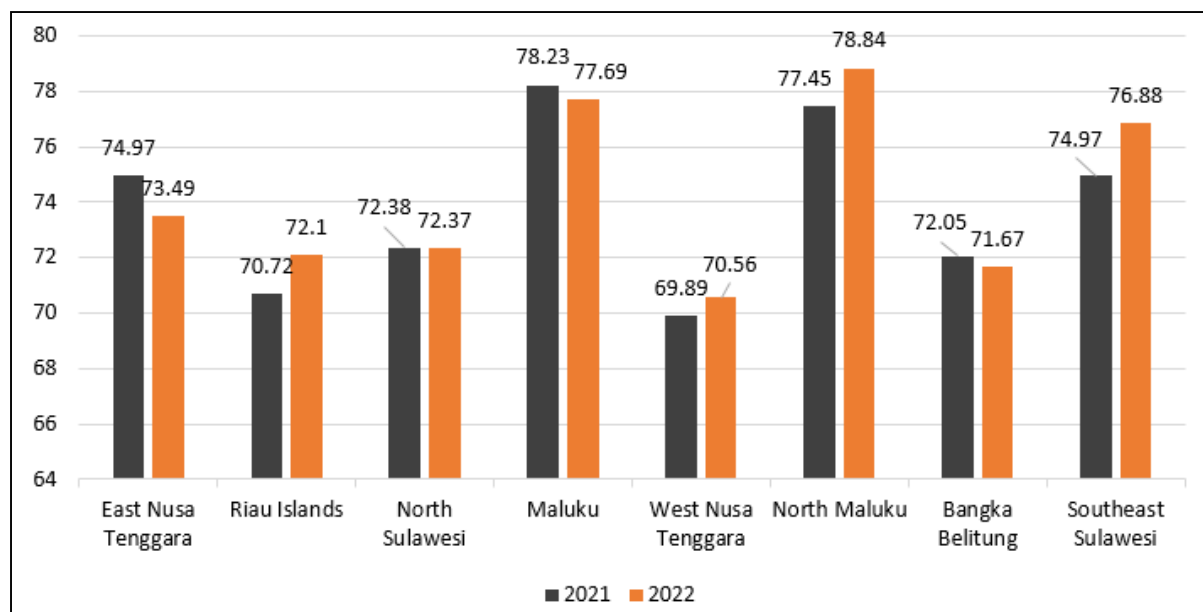


Figure 2: The Environmental Quality Index’s Island Provinces

Source: [Statistics Indonesia \(2022\)](#)

In 2022, the environmental quality index (IKLH) of Indonesia’s island regions showed various trends, with some provinces experiencing improvement while others faced a decline. Among the provinces that successfully increase their environmental quality were Riau Islands, West Nusa Tenggara, North Maluku, and Southeast Sulawesi. These improvements reflect the commitment of these regions to preserving environmental sustainability and better managing natural resources.

Notably, Maluku emerged as the province with the highest IKLH score in 2022, achieving 78.23 points. This achievement was surpassed by North Maluku in 2023, which saw a significant increase, reaching 78.84 points at that time. The primary factors behind this success include the relatively vast and natural forest areas in Maluku. Due to its geographical characteristics, consisting of small islands with limited industrial activities, this region tends to have few pollutions.

On the other hand, West Nusa Tenggara recorded the lowest IKLH scores among island provinces in both 2022 and 2023. The low environmental quality index in West Nusa Tenggara is influenced by several factors, including the rapid increase in mining and tourism activities. These activities often lead to environmental degradation, from deforestation to water and air pollution. The major challenge for West Nusa Tenggara moving forward is to balance economic growth with environmental preservation efforts, aiming to enhance the quality of life for its residents and meet higher environmental quality standards.

[Bhattacharya & Dash \(2021\)](#) stated that Indonesia has natural resource potential that can be optimized to boost exports of green products while reducing the impact of climate change. [Pandyaswargo et al. \(2021\)](#) added that green products or environmental goods (EG) are designed to use fewer resources or produce less emissions. This potential can be developed if government policies support sustainable industry sectors. Previous research by [Fasa \(2021\)](#) revealed that government policies and legislation are key to the successful transformation to green trade in Indonesia, especially in island provinces.

The continued hope for better environmental quality without sacrificing the economy is also supported by empirical evidence. The correlation value between IKLH and the economic

growth rate in 2021 was 0.48 with the significance level of 0.03. A 95 percent confidence level indicates sufficient evidence to state that the relationship between the correlation value and IKLH in Indonesia’s island provinces is positive and moderate. In other words, as economic growth rates increase, so does the quality of the environment in these areas.

Table 2: Correlation Between the Environmental Quality Index (IKLH) and Economic Growth Rate For 2021-2023

Component	Pearson Correlation	Sign.
Growth 21 x IKLH 21	0.480373	0.03

The continued hope for better environmental quality without sacrificing the economy is also supported by empirical evidence. The correlation value between IKLH and economic growth rate in 2021 was 0.48 with a significance level of 0.03. A 95 percent confidence level indicates sufficient evidence to state that the relationship between the correlation value and IKLH in Indonesia’s island provinces is positive and moderate. In other words, as economic growth rates increase, so does the quality of the environment in these areas.

Table 3: SPSS Output for Panel Regression Statistics Test Results

Model	F Significance	R Square	Durbin Watson	T-sign LPE	T-sign Export	T-Sign Leading Export
Multiple Linear Regression	0.138	0.357	1.82	0.978	0.48	0.52
Time Effects	0.219	0.382	1.761	0.779	0.05	0.06
Fixed Effects	0.082	0.88	2.724	0.973	0.181	0.241
Pooled Effects	0.266	0.954	2.493	0.231	0.375	0.224

Based on Table 3, it is concluded that the model with fixed effects is considered the best model based on the significance level of the F-statistic. This indicates that all independent variables collectively impact the Environmental Quality Index (IKLH). Additionally, a Durbin-Watson value of 2.724 suggests that there is no autocorrelation. Although the R-squared value (0.88) is lower than that of the pooled effects model (0.954), it is sufficient to support using the fixed effects model as the best choice. This indicates that differences in IKLH between island provinces remain consistent over time and are not directly influenced by economic variables that do not change over time. In other words, if the independent variables in this study continue to change over time, it will significantly affect the environmental quality indicators. Table 4 shows the model created from the fixed effects model result, where export activity significantly affected the environmental quality index for each island province.

Table 4: Fixed Effect Model Test Results

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	13.178	1.353	7.82	0.0018
Export	0.219	0.082	1.707	0.0090

Each province has its own characteristics. The natural potential and resources available make each province adopt different economic approaches. For island provinces with long coastlines, such as Maluku, there is potential to process and export marine products. Marine exports dominated Maluku’s exports throughout 2023, accounting for 64.93 percent (Figure 1).

A commodity entering the export market must undergo various, lengthy quality control stages. [Yudha & Vanessa \(2022\)](#) explained that exporting food commodities involves several complex stages. These stages include market identification, competition and price analysis, licensing and regulations, contract and offer preparation, pricing, packaging, and labeling, preparing export documents such as commercial invoices, packing lists, certificates of origin, and fulfilling customs duties and taxes. This process does not include arrangements for shipping methods, insurance, tracking, and monitoring customs in the destination country.

Therefore, the lengthy process can absorb a significant amount of labor. [Silva \(2022\)](#) stated that redirecting labor to the export sector can address social and employment issues. To gauge the impact on employment absorption, the Open Unemployment Rate (TPT) is used as an indicator. TPT is the percentage of unemployed individuals relative to the total labor force. The relationship between export performance and the open unemployment rate is analyzed using Pearson correlation. The results of this analysis are displayed in Table 5.

Table 5: SPSS Output for Pearson Correlation Between Leading Exports and Open Unemployment Rate

Component	Pearson Correlation	Sign.
Leading Export x TPT Feb 23	0.399335	0.09
Leading Export x TPT Aug 23	0.224831	0.18

From Table 4, it can be seen that the relationship between key exports and the Open Unemployment Rate is relatively weak (<0.5) with 90 percent significance. This is problematic because despite the increase in exports in island regions, it is not accompanied by sufficient labor absorption. This may be due to the use of advanced technology, which reduces the need for human labor. Private sector companies often prefer technology to enhance production efficiency and lower costs.

A common business principle applied by the private sector is to maximize profits while minimizing costs, often by utilizing modern technology. However, if exports rely solely on the private sector without government intervention, the economy may not be sustainable. While the private sector plays a crucial role in increasing purchasing power, creativity, and national revenue, the government must also step in to regulate and support a sustainable economy. Therefore, government oversight is essential for achieving these goals.

Despite this, the correlation coefficient calculation in Table 4 shows weak significance. This suggests that to increase confidence in the impact of export activities on labor absorption, further observations are needed. Future research should consider expanding observations to include all provinces in Indonesia. For greater confidence, a more detailed analysis at the district and city level, particularly in island regions, is recommended.

Conclusion

In the context of the island regions of Indonesia's economy in 2023, several key conclusions can be drawn from this research. First, the export of key commodities plays a significant role in contributing to the total export value in nearly all island provinces. Second, the analysis indicates that the Fixed Effect model is the most suitable. Highlighting that all dependent variables collectively affect the Environmental Quality Index (IKLH). However, there is a weak correlation between the performance of key commodity exports and the open unemployment rate, which underscores the need for government intervention to ensure that

the economy can create jobs while maintaining green and sustainable economic principles. Therefore, to achieve inclusive and sustainable economic growth in island regions, a concerted effort from the government, private sector, and community is required to strengthen export transformation, improve environmental quality, and reduce unemployment through policies based on sustainable green economics. The limitation of this research is that it only focuses on the main leading exports, even though several regions have more than one leading commodity and almost the same size. Hopefully, future research will diversify superior commodities and more complex research methods to obtain export potential and green economic practices in archipelagic regions.

References

- Aisyah, S. & Hardiyati, R. (2019). Co-authorship Pattern in Research on Energy Sector: Social Network Analysis. *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi Dan Pembangunan*, 20(1), 50–59. <https://doi.org/10.23917/jep.v20i1.7735>
- Bhattacharya, P., & Dash, A. K. (2021). Determinants of blue economy in Asia-Pacific island countries: A study of tourism and fisheries sectors. *Ocean and Coastal Management*, 211, 105774. <https://doi.org/10.1016/j.ocecoaman.2021.105774>
- Fasa, A. W. H. (2021). Aspek Hukum dan Kebijakan Pemerintah Indonesia Mengenai Ekonomi Sirkular Dalam Rangka Mencapai Tujuan Pembangunan Berkelanjutan. *Jurnal Rechts Vinding: Media Pembinaan Hukum Nasional*, 10(3), 339-357. <https://doi.org/10.33331/rechtsvinding.v10i3.774>
- Faradis, R., & Afifah, U. N. (2023). Tantangan Pariwisata dan Ekonomi Kreatif Provinsi Kepulauan di Sumatera Pasca Pandemi. *Jurnal Archipelago*, 2(2), 195-206. <https://doi.org/10.69853/ja.v2i02.59>
- Kasztelan, A. (2017). Green Growth. Green Economy and Sustainable Development: Terminological and Relational Discourse. *Prague Economic Papers*, 26(4), 487–499.
- Madany, N., & Rais, Z. (2022). Regresi Data Panel dan Aplikasinya dalam Kinerja Keuangan terhadap Pertumbuhan Laba Perusahaan Idx Lq45 Bursa Efek Indonesia. *VARIANSI: Journal of Statistics and Its Application on Teaching and Research*, 4(2), 79–94. <https://doi.org/10.35580/variensium28>
- Maidasari, T., Prakoso, L. Y., & Murtiana, S. (2023). Renewable Energy ss A Green Economy Stimulus in Indonesia. *Jurnal Energi Baru dan Terbarukan*, 4(3), 183-191.
- Mahardika, I. Z., & Aisyah, S. (2023). Determinan Ekspor Besi dan Baja Indonesia. *Ekonomis: Journal of Economics and Business*, 7(2), 750. <https://doi.org/10.33087/ekonomis.v7i2.920>
- Malihah, L. (2022). Tantangan Dalam Upaya Mengatasi Dampak Perubahan Iklim Dan Mendukung Pembangunan Ekonomi Berkelanjutan: Sebuah Tinjauan. *Jurnal Kebijakan Pembangunan*, 17(2), 219–232. <https://doi.org/10.47441/jkp.v17i2.272>
- Mania, E., & Rieber, A. (2019). Product export diversification and sustainable economic growth in developing countries. *Structural Change and Economic Dynamics*, 51, 138-151.
- Pandyaswargo, A. H., Wibowo, A. D., Maghfiroh, M. F. N., Rezqita, A., & Onoda, H. (2021). The emerging electric vehicle and battery industry in Indonesia: Actions around the

- nickel ore export ban and a SWOT analysis. *Batteries* 7(4). <https://doi.org/10.3390/batteries7040080>
- Pramesti, A. W., Ratnasari, S. L., Sutjahjo, G., Nugrahani, F., & Safitri, D. E. (2021). Analisis Kebijakan Ekspor Benih Lobster Berdasarkan Prinsip Pembangunan Berkelanjutan Analisis Of Lobster Seed Export Policy Based On Sustainable Development Principles. *UNRIKA*, 10(3), 600–607. <https://www.journal.unrika.ac.id/index.php/jurnaldms>
- Ramadhani, N. A., Setyowati, A. E., & Arwanto, B. (2022). Kewenangan penguasa negara terhadap sumberdaya dalam atas bentuk perusahaan perkebunan sawit. *Cessie - Jurnal Ilmiah Hukum*, 1(2), 89–96.
- Sandi, N. I. (2023). *Transformasi Struktur Ekonomi Kota Makassar Dalam 3 Dekade* [Bachelor's thesis, Universitas Hasanuddin].
- Silva, V. (2022). The ILO and the future of work: The politics of global labour policy. *Global Social Policy*, 22(2), 341–358. <https://doi.org/10.1177/14680181211004853>
- Siregar, S. (2017). *Statistik Parametrik untuk Penelitian Kuantitatif*. PT. Bumi Aksara.
- Statistics Indonesia. (2022). *Statistik Lingkungan Hidup Indonesia 2022*. Badan Pusat Statistik.
- Statistics Indonesia. (2023). *Indeks Unit Value Ekspor 2020-2022*. Badan Pusat Statistik.
- Statistics Indonesia. (2024). *Perkembangan Ekspor Impor Desember 2023*. Badan Pusat Statistik
- Telesford, J. N. (2014). Strategic sustainability and industrial ecology in an island context, with considerations for a green economy roadmap: a study in the tourist accommodation sector, Grenada [Doctoral dissertation, Robert Gordon University].
- Wahyuni, E. F., & Hilal, S. (2022). Analisis Implementasi Etika Kerja Islam. Ekonomi Hijau dan Kesejahteraan dalam Prespektif Ekonomi Islam. *Jurnal Ilmiah Ekonomi Islam*, 8(03), 3476–3486. <https://doi.org/10.29040/jiei.v8i3.6594>
- Woolridge, J. (2010). *Econometric analysis of cross section and panel data (2nd ed. Vol. 2)*. Cambridge: MIT Press.
- Yanti, C. A., & Akhri, I. J. (2021). Perbedaan Uji Korelasi Pearson, Spearman dan Kendall Tau Dalam Menganalisis Kejadian Diare. *Endurance*, 6(1), 51–58. <https://doi.org/10.22216/jen.v6i1.5256>
- Yudha, E. P., & Vanessa, G. C. (2022). Analisis Kinerja Ekspor Cabai Hijau Di Indonesia Performance Analysis of Green Chillies Exports in Indonesia. *Jurnal Apresiasi Ekonomi*, 10(3), 340–345.